

MEDICAL AND SURGICAL REPORTER

No. 1754.

PHILADELPHIA, OCTOBER 11, 1890. VOL. LXIII.—No. 15.

CLINICAL LECTURE.

LARGE WHITE KIDNEY, ASSOCIATED WITH DROPSY, ALBUMINURIC RETINITIS AND UREMIA.¹

BY JOHN H. MUSSER, M. D.,

ASSISTANT PROFESSOR OF CLINICAL MEDICINE, UNIVERSITY OF PENNSYLVANIA; VISITING PHYSICIAN TO THE PHILADELPHIA HOSPITAL.

Dropsy from Nephritis.

Gentlemen: The patient I bring before you makes a fair object lesson in clinical medicine, manifesting as he does some of the interesting features of the diseased condition from which he is suffering. In examining a patient, we take first, as the basis upon which to construct our judgment of the case, the symptoms of which the patient complains—the subjective symptoms—and then we proceed to examine the patient with respect to the condition of each organ and secretion, every structure and function, thus confirming our judgment by means of the objective symptoms. The patient may or may not be aware of the objective symptoms, as in the case of a slight curvature of the spine, or a cavity in the lungs, while the subjective symptoms are only indicated to the physician through the sensations of the patient. Physical diagnosis consists in the use of our senses in any way to detect any abnormal condition. The examination of the urine is as much physical diagnosis as is the examination of the chest. Often we will be unable to use anything but physical means to discover the ailment present, as when the patient is unable to assist us because of coma, for instance.

This patient has been in the ward for

some time. He was admitted on the seventh of August complaining on account of swelling of the body, the development of which is of interest. It came on in April last after some exposure. It was greatest in the feet, but with some puffiness under the eyes. By June it had extended over his entire body. In July he was admitted to the German Hospital with an extremely swollen condition of the entire body. At the same time he complained of severe headache and was unable to see as readily as formerly—a slight failure of vision. We have no accurate account as to any improvement while the patient was in the German Hospital, but we learn that on the first of August he passed his urine very frequently, while on the third and fourth the amount voided very much decreased and the swelling recurred. His condition on admission on August 8 was more aggravated than at the present time. His face, arms, legs and trunk were swollen and there was diminution in the amount of urine voided—objective symptoms. He was suffering with headache and dimness of vision, together with symptoms due to the mechanical effects of the swelling—subjective symptoms.

Let us now look into his present condition. You will notice there is some swelling of the eyelids and some conjunctivitis, with lachrymation. The general swelling has been considerably reduced during the last four or five days. The structures of the face appear to be normal on palpation. The legs were extremely swollen, and to-day show readily the characteristics I wish to call to your attention. They are very pale, the skin over the shin bones is tense and shining, and over all there is a slight eruption. The legs were swollen to bursting, and no doubt this gave rise to the present irritated state of the skin. At times the swelling is so great as to cause ulceration and even to lead to gangrene from irritation by the decomposed serous exudation, with

¹ Delivered at the Philadelphia Hospital.

malnutrition of the parts. We recognize that this swelling is due to cedema, from the pallor, the pitting on pressure, and the absence of heat in the part. The thighs are also cedematous, hard and tense. There is great distension of the abdominal surface, which is very pale, and pits moderately on pressure. The flanks are swollen and boggy.

The patient has what is known as anasarca, or general dropsy of the subcutaneous cellular tissue. His abdomen is enlarged, regular in outline, free from pain. On palpation I detect feeble fluctuation, which, however, is largely masked by the thickness of the abdominal walls. On percussion I find resonance all over the surface in front with dulness beginning a little below the nipple line on the sides extending into the flanks. Dulness indicates the absence of the natural gases found in these parts. A solid or fluid material replaces the gas-containing structures. Fluctuation shows this non-resonant material to be fluid. To confirm our diagnosis of the presence of fluid in this abdominal cavity we will note whether this dulness in the flanks is influenced by any change in the position of the patient. As he turns over, I notice that the dulness has disappeared in this left flank, and instead we have tympany extending to the anterior axillary line, while on the opposite side the dulness begins from one to one and a half inches nearer the median line than before. There is then a serous effusion or ascites present here. There is also an effusion in the pleural cavity, which I will not demonstrate to you, for fear of exposing the patient too long.

General dropsy occurs from three prominent causes. In the first place it comes from affections of the blood; second, from disease of the central organ of the circulation, the heart; and, third, from diseases of the kidney. To determine which of these varieties is present, one must study each organ carefully. We start with a study of the function and structure of the organ to which attention was first directed by the patient's complaints. In this case we hear that the urine was diminished and at one time almost suppressed. Examination of the urine reveals the appearance indicative of an inflammation of the kidney. There are several kinds of such inflammation. In the first place there is the acute form, with diminution of the urine or actual suppression. Here the tubules and glomerules are the seat of the process. Un-

der such circumstances and especially in glomerular nephritis, blood is more often present in the urine than in other forms. In addition to the acute form of the disease, we have a form of inflammation in which the process is not so active. Blood is not discharged from the tubules nor leucocytes in such abundance; and we find that the casts and epithelial cells are granular and in fatty degeneration, and free fat may be seen in the urine. The presence of casts in the urine is more markedly indicative of renal inflammation. With a base of hyaline material they vary in character according to the transudation of blood, epithelium and leucocytes, or they may be simply composed of the hyaline substance alone. In the more active form they are bloody, epithelial, granular and hyaline; in the more chronic cases the epithelium is more granular and fatty, and contains fat globules. The main factors in the recognition of inflammation of the kidney is the presence of these casts, along with the presence of albumin in the urine. In acute Bright's disease there is a large amount of transudation of albumin: so much at times that the coagulum fills one-quarter or one-half of a test-tube solidly, on boiling. In the more chronic forms, the albumin, though large in amount, is not so large as in the acute forms. At present this patient fills one-eighth of a tube solidly. There is also a change in the specific gravity of the urine. In the acute and subacute forms it is high. Only small amounts of urine can be secured from this patient on account of its involuntary escape, and we are unable to ascertain its specific gravity. The urine of acute Bright's disease is of a high color, intensely red or smoky, while in the chronic forms it is lighter. A characteristic of nephritis which is often seen is the frequency with which the urine is passed and small amounts voided at a time.

We have here a subacute catarrhal nephritis, a patient with the so-called "large white kidney."

In nephritis there are always, in addition to the occurrence of dropsy, one or two other general changes. The kidney occupies a position directly in the course of the circulatory system, and the heart is always more or less affected in renal disease—hypertrophied. The cause of this is not known. There are several views; some think it is due to obstruction in the renal circulation; others think that as the discharge of urine is less, urea is retained in the circulation, causing

some of the phenomena, which are only a partial explanation, and not the true cause of the obstruction. The process is not so active. Blood is not discharged from the tubules nor leucocytes in such abundance; and we find that the casts and epithelial cells are granular and in fatty degeneration, and free fat may be seen in the urine. The presence of casts in the urine is more markedly indicative of renal inflammation. With a base of hyaline material they vary in character according to the transudation of blood, epithelium and leucocytes, or they may be simply composed of the hyaline substance alone. In the more active form they are bloody, epithelial, granular and hyaline; in the more chronic cases the epithelium is more granular and fatty, and contains fat globules. The main factors in the recognition of inflammation of the kidney is the presence of these casts, along with the presence of albumin in the urine. In acute Bright's disease there is a large amount of transudation of albumin: so much at times that the coagulum fills one-quarter or one-half of a test-tube solidly, on boiling. In the more chronic forms, the albumin, though large in amount, is not so large as in the acute forms. At present this patient fills one-eighth of a tube solidly. There is also a change in the specific gravity of the urine. In the acute and subacute forms it is high. Only small amounts of urine can be secured from this patient on account of its involuntary escape, and we are unable to ascertain its specific gravity. The urine of acute Bright's disease is of a high color, intensely red or smoky, while in the chronic forms it is lighter. A characteristic of nephritis which is often seen is the frequency with which the urine is passed and small amounts voided at a time.

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or contraction of the peripheral vessels, while others think the renal change is only a part of a general vascular inflammation, and that endarteritis is present throughout the system. This gives rise to an obstruction, and the heart hypertrophies to overcome the difficulty. The spastic state of the vessels certainly presents, from whatever cause, creates high arterial tension, common to all forms of nephritis, and a classical symptom of chronic interstitial nephritis. By examining, daily, the pulse of patients in whom acute Bright's disease may arise, especially in scarlatina patients, we can detect this high arterial tension, and ascertain when renal trouble is beginning. Some authorities believe the renal disease is not a local inflammation, but a part of the general disease, arguing from the fact that the high tension is present before the albumin is found in the urine. Of course, then, our attention is directed at once to a study of the circulation in a case of nephritis. There is, in this patient, no organic heart disease, and, let me state just here, no affection of the blood, no leucocythemia or malaria; and so we decide that this is a case of general anasarca due to the presence of a subacute catarrhal nephritis. There is, however, some increase in the size of the heart, and an examination of the pulse shows a high arterial pressure. The wave as shown by the sphygmograph is sustained, the tracing is broadened at the top, indicating a persistency of the wave. The artery is hard, and the wave persists under the finger very perceptibly. The presence of high arterial tension is further shown by the marked accentuation of the second aortic sound, in its usual location.

The patient complained of headache. This is sometimes a very prominent feature in acute nephritis and is almost always tonic in nature. Whether it is due to irritation of the nerve centres or meninges by blood loaded with morbid material or to alteration in the tension of the cerebral vessels, I cannot say. I am inclined to think the latter. There is also present a marked inflammation of the vessels in the eye-ground, as shown by a direct examination of the eye. There is here present the so-called retinitis albuminurica—an unfortunate condition; because when hemorrhages occur they are very slowly absorbed. In all cases of altered vision, dimness of vision, sudden blindness, hemiopia and diplopia, examine the urine; for often the

condition is due to nephritis, either catarrhal or more likely the interstitial form. This is frequently encountered in pregnant women.

The treatment here is important. Some cases of nephritis will not get well in spite of treatment. The acute form usually recovers under rest, liquid food, the drawing of blood from the kidneys by cups to the loins, and by hot applications to relieve the internal congestion. If the case is a grave one, you may use some general depletion as well. Purgation may be resorted to to empty the vessels and to relieve the pressure on the kidneys. The patient must be kept warm, and hot-air baths—the best because the safest diaphoretic—should be employed. Pilocarpine is debilitating, and therefore not safe. Rest and warmth alone will often suffice. The diet should be skim-milk, butter-milk or whey. Digitalis and salts of potassium may be used after the first ten days. The best purgative to use is cream of tartar in lemonade. If not sufficient, it may be replaced by compound jalap powder or elaterium.

In this patient we have the low-grade passive inflammation with degeneration of the inflammatory products. In him we may use slightly stimulating diuretics. Digitalis has been used with hot-air baths, and pilocarpine has been given, with relief, but not sufficient. The dropsy persists, together with the headache and dimness of vision. He has also had constant delirium, worse at night, with persistent delusions, almost as much so as in insane patients. In other words, in this patient we have the classical cerebral symptoms of uremia coupled with those of catarrhal nephritis. We were not satisfied with digitalis, so we placed him on sparleine and caffeine for the head symptoms; twelve to sixteen grains of the latter in twenty-four hours. The grave symptoms of uremia have disappeared; the dropsy is lessened; and the patient is gradually passing into a condition of comfort. His pulse was weak, and on this account stimulants were given, namely, compound spirits of juniper. As the case progresses it will be wise to give a more decided stimulant, to act more especially on the renal epithelium, such as the terebinthates, minute doses of cantharides, or sandal-wood. Anemia is present, as usual in all cases of nephritis, and it will be necessary to give preparations of iron or minute doses of arsenic or bichloride of mercury.

COMMUNICATIONS.

DRAINAGE IN ABDOMINAL SURGERY.¹

BY GEO. ERETY SHOEMAKER, A. M., M. D.,
ATTENDING GYNECOLOGIST TO ST. CLEMENT'S HOS-
PITAL, OUT-PATIENT SURGEON TO UNIVERSITY
AND PRESBYTERIAN HOSPITALS,
PHILADELPHIA.

The subject of drainage in abdominal surgery is not new, but a wide difference in practice makes it worth further discussion. The object of this paper is to state the indications for drainage, to describe its proper method, to enter a plea for its more frequent use, and to draw out the views and experience of those present who are interested in the matter. If an ideal operation could in every instance be done, the subject of drainage would have but little importance; but practical methods and not ideal ones must be adopted. The great utility of the drainage-tube is in cases of hemorrhage or of sepsis following abdominal section. When bleeding has been apparently controlled by sponge pressure or by pressure forceps, there must always remain some element of doubt as to what amount of secondary hemorrhage will occur after the patient has reacted from shock, or by reason of the dislodgment of minute clots from subsequent movement of the parts. The ability of the peritoneum to absorb even a large amount of serous exudation or blood cannot be denied; and could the absolute asepsis of this quantity of exudate be assured, Nature would undoubtedly do the work of the drainage-tube in almost all instances. Schede's method of healing surface wounds by the organization of blood clot, and that recently-advocated "dry method" of healing such wounds without drainage, might be used in an argument against abdominal drainage; but they depend for their success upon absolute asepsis.

Perfect surgical cleanliness is undoubtedly the aim of every abdominal operator; but most human beings, including assistants, are fallible. Which of us has succeeded perfectly every time? It is note-

worthy too that some of the warmest advocates of drainage are at the same time most rigid in their aseptic methods. The fact remains, that after all skill is used some chances must be taken. Does or does not the drainage-tube in all but the simple cases lessen these chances? For example, in the operations on small tumors deep in the pelvis and in pyosalpinx cases, much of the work must be done by the sense of touch alone, and it is impossible to see the field of operation. Time after time it has occurred to men of the greatest skill to cause a small bowel perforation which it was impossible to detect by the eye; or a small amount of infected material has been extruded in a tedious enucleation. If such a case be not drained the surgeon does not rely on his skill for the recovery of the patient, but on the chances that no harm will follow. Again, the amount of secondary oozing, while it may be possible to gauge it in most cases, will in others, for some reason, be unaccountably great. In the writings of all operators of experience one finds reference to fatal cases in which the one regret was that the drainage-tube had not been used. Not to cite wearisome instances the following language of Bantock, *British Medical Journal*, January 22, 1881, may be quoted: "In my earlier cases I did not resort to the drainage-tube as often as I did in my later, and it was not till I had lost a patient under circumstances in which I would now consider it indispensable that I saw the importance and value of the instrument." Again, Thomas Keith, *Contributions to the Surgical Treatment of Tumors of the Abdomen*, 1885, p. 20, while recommending the tube less frequently than some other skillful men, mentions a case in which the patient died because he did not use it. The quantity of blood which he afterwards found in the pelvis was thin and dark—in other words disorganizing. The same writer in speaking of hysterectomy for fibroids, says: "Nothing has surprised me so much as the amount of almost pure blood that was removed from the pelvis in several of the cases that were drained. Where it came from in some of them remains a mystery to me." In the light of these facts, unless it can be shown that the use of a drainage-tube in itself involves more risk than does immediate closure, the responsibility for a fatal case of this character would rest upon the surgeon.

The chief objections that may be urged

¹Read in the Section of Obstetrics and Diseases of Women of the American Medical Association, at Nashville, Tenn., May, 1890.

me: the danger of hernia or of fistula of the abdominal wall; the possible infection of the ligature or of the peritoneum; mechanical injury by the tube pressing upon viscera.

These points may be answered as follows: first, a small clean tube, removed in forty-eight hours, will tide over the period of chief danger from hemorrhage and will not, if well managed, interfere with the strength of the cicatrix by the end of the ordinary period of confinement to bed. If the tube be retained longer than this it is for some good reason which outweighs the increased danger of hernia. In cases where it is retained for weeks, it is because it has given exit to materials which would have infallibly caused death if not removed; and its use is vindicated.

The relation to subsequent hernia is an important matter. The tube must be kept clean and after its withdrawal a good closure of the opening be secured, either with a silver stitch previously untwisted, or by having the two lower stitches very close to a tube of small caliber. Far more important factors in the causation of hernia are the strain which results from leaving the bed too early and failure to properly support the abdominal wall with a bandage. Healing by granulation results in dense cicatricial tissue, but plenty of time must be given the process before intra-abdominal pressure is allowed to thin out the cicatrix. In one of the most successful operations of the day for the radical cure of inguinal and femoral hernia, the method of healing is in preference by granulation, but the patient is confined to bed six or eight weeks after the operation. Some of us have heard of laparotomy cases discharged from hospitals in two weeks.

Next to a fecal fistula, one of the most troublesome forms of sinus remaining after abdominal section is due to an infected ligature; and the possible influence of the drainage-tube in causing this infection is worthy of careful consideration. This accident has by some been attributed to the large size of the thread employed for the pedicle, but it has also occurred where the finest silk compatible with safety has been used. The thoroughness with which sterilization of this thread has been carried out before the operation is a matter for the conscience of the surgeon to determine; but an improperly managed drainage-tube is no doubt capable of infecting it. The claim is here made that such infection need not oc-

cur if proper care is used. The right management of a drainage-tube is indeed a matter of the greatest importance; and that some surgeons use a tube infrequently is doubtless owing to the fact that this part of the after-treatment cannot be personally carried out, but must be entrusted to others, too often without special skill and experience. As a choice of evils, no tube is better than a badly managed one.

Excessive pressure by the inner end of the tube has caused intestinal fistula. The usual recommendation for preventing this is that the tube should be raised half an inch daily, or oftener, and allowed to resume its place.

Another point of greater importance is lateral pressure caused by the sliding of the external dressing. If this is not watched, a powerful leverage pressure is exerted, especially by a rubber adhesive plaster dressing, the wound in the abdominal wall acting as a fulcrum.

Too much attention cannot be paid to the maintenance of an absolutely sterile area in and about the apparatus. The same precautions should be exacted from a nurse in emptying and dressing a tube as would be required in exposing the entire wound. Its caliber, whether or not filled with gauze or wicking, should be cleansed by some antiseptic solution, such as a saturated solution of boric acid, after the first forty-eight hours.

The mouth of the tube should never be stopped by a cork, as has been recommended, nor should a sponge be used as a cover. A large pad of absorbent cotton kept closely applied to the opening will serve perfectly to exclude the sources of decomposition; while all excess and dripping of discharge upon the rubber sheeting should be most carefully removed by a strong antiseptic solution, such as 1 to 1,000 mercuric bichloride; the rubber itself being occasionally removed for the purpose. It cannot be too strongly urged that the same rigid attention to cleanliness should be observed as in redressing a stump after amputation. One point in which nurses are careless is in handling the syringe. When the compression bulb syringe of Tait is used for suction, the bulb must never be compressed after the nozzle is put in the drainage-tube, but always before its introduction. Let the syringe be kept filled with an antiseptic when not in use; let the tube itself be light in weight and of small caliber; let powdered boric acid be used freely outside about the

main dressing where the tube comes through, if any moisture be present; let the tube be kept empty; when the discharge is slight, let the glass be replaced after twenty-four hours by a smaller rubber tube, slipped inside before the first is removed; and after another day let this be removed, its mouth having been kept well covered by absorbent cotton meanwhile. So managed, a drainage-tube is a safeguard and not a menace to the case.

A practical question is, when to drain. Certainly not in operations of the simplest character, which have been rapid in execution, where there have been no adhesions, little handling, no effusion and no pus. The cases where it is advisable are: where adhesions have been abundant and where oozing continues; where hemorrhage has been free and the patient is weakened; where the intestine is of doubtful vitality or where it has been stitched or resected; when the patient is old; when the peritoneum is diseased; when pus has escaped or a colloid cyst has ruptured; when there is septicemia or pyemia; when irrigation has been used; when much ascites is found. Finally, in all cases of doubt, drain.

A single case may be cited to illustrate the importance of drainage in septicemia. A woman who had been ill since an attack of puerperal fever nine months before, presented herself suffering greatly and with a tumor reacting to the umbilicus. Laparotomy disclosed an ovarian cyst containing nearly two quarts of pus, with abundant and most formidable organized adhesions to everything touched. The cyst wall was friable, dark and badly degenerated at several points where rupture would apparently soon have taken place into thickened and adherent bowel. The growth was with difficulty entirely removed. The drainage-tube was used for two days, nothing coming away but clear serum, though this was abundant for twenty-four hours. The patient recovered promptly and remains well. Notwithstanding that the day before operation the temperature was 104° and the pulse 150, the former did not exceed 99.5° in the two weeks succeeding the removal of the cyst. Now this woman, in my opinion, owed her life to the drainage-tube. Not because it carried off blood—for there was none; not because it drained a peritonitis—for there was none after the operation; but because in the poisoned condition of her system, as shown by pulse, temperature and emacia-

tion, the quantity of serum removed by the tube would not have been absorbed, pus would have formed or peritonitis would have occurred and she would have lost her life.

TREATMENT OF DISEASES OF THE RESPIRATORY ORGANS WITH DRY INHALATION.¹

BY O. A. DEAN,
SOUTH HAVEN, MICH.

The profession seems to have got far away from the old idea of sthenic conditions in diseases, in these as in other organs, demanding depletion and depressants, and to have settled rather upon the belief that all disease is asthenic. Pneumonia is no longer combatted (?) by blood-letting or hardly by veratrum, but is treated with stimulants, tonics and rest, which is another form of tonic. Typhoid fever is no longer starved or dried up, but is fed and stimulated and controlled. And if this be true in acute, much more is it true in chronic diseases of whatever nature, and I believe that those measures which have been most effectual are those which have had most of tonic element in them. Latterly the profession has had much to say of microbes, bacilli, cocci, etc., and has come to recognize that these low organisms flourish in asthenic conditions and unhealthy surroundings, and that our germicides have accomplished their object *pari passu* as these untoward concomitants have been eliminated. We have essayed to treat and to cure diseases of the mucous membranes, especially catarrhal, not by depletants but by stimulants and antiseptics of various kinds, at the same time building up the general strength by tonics. We have devised numerous instruments for applying sprays of various kinds, and the seller has been profited, perhaps the patient benefited, but how seldom cured; and they have left us after a time to submit themselves to the irregular practitioner who makes the most specious promises and charges the largest fee "for medicines only."

In view of our failures, the query is pertinent, would our efforts have succeeded if differently directed? We believe that in these catarrhal affections local applications are

¹ Read before the Section of Practice and Medicine of the Michigan State Medical Society, at Grand Rapids, Michigan, June 19, 1890.

necessary or very beneficial, but we know how difficult, nay impossible, it has been and is to reach the mucous membrane with any of the ordinary means. Our sprays might be good if they could be applied where wanted, but "there's the rub." In the nasal passages in favorable cases we could reach the inferior, and in a measure, the middle, sinus; but the superior scarcely at all. We could get a spray as far as the larynx, but only very sparingly into the large, and not at all into the finer bronchi; and so our antiseptics have failed to reach the abscess or vomica, or germ-laden bronchial tubes, and we have been obliged to depend on the general measures hinted at to accomplish our ends.

On the other hand, we have learned through our own, or the observations of others, that dry impalpable powders can and do penetrate to the finest ramifications of the air tubes and vesicles, as shown by the lungs of coal miners and others. Perhaps we have been made to realize it in our own persons after rides over dusty roads, or possibly in our younger days by standing behind a threshing machine, and expectorating dust for two or three days afterwards.

I therefore advocate to-day a trial of this method therapeutically. If we can deposit on the mucous membranes medicinal substances in impalpable powder, or in condensable vapor, we shall reach directly the diseased parts and produce effects upon them proportionate to the potency and strength of our remedy. The instruments which I have the pleasure of showing you are constructed for this purpose, and are the outcome of an idea of a Mr. Lindegaard, a photographer of Christiania, Norway, himself afflicted for many years with phthisis, who conceived the idea that nitrate of silver should be a remedy of value in that disease. To test the subject he had constructed a close room, the air of which he impregnated by some secret process with the remedy, and breathed it at stated intervals. He soon began to improve, and induced others to try it also; but the experiment was soon discontinued on account of the discoloration of the skin which resulted. Meantime he had become well and strong. Fifteen years afterwards he was drowned, and an autopsy was made by physicians who had known of his previous condition and recovery, who found firm cicatrices of former cavities, and evidences which satisfied them that they were the results of his experiments upon himself; and one of

them expressed his belief that nitrate of silver in impalpable powder, the quantity of which could be controlled, would prove a wonderful remedy. Mr. F. Störmer, a civil engineer, to whom the remark was made, soon after produced an instrument which he called the "Störmer Norwegian Inhaler," of which this is a modification which seems to fulfil the requirements. It consists of a heater, partly of metal and partly of glass,



so constructed that air can be admitted at the base heated, and discharged at the upper orifice. Into this heated current of air a fine spray is thrown, through an opening provided for the purpose, from an atomizer. This spray is immediately vaporized, and if a liquid will be inhaled as vapor, or if a solid, will be crystallized and inhaled as a dry powder, in either case issuing in an invisible condition. To demonstrate the verity of the action I show you a card with spots made by exposure for specified times and to various strengths of nitrate of silver. This card was simply moistened with water that the dry crystals might the more easily adhere. On another card is seen the action of iodine upon starch, both demonstrating the

fact that the amount of impression is perfectly under control. That this impregnated air when respired reaches the fine bronchial tubes would be expected, and has been proven by experiments upon animals which I need not detail. Further than this, and as indicating that the scope of this method of medication may be broader than here set forth, it has been shown that inhalations of a mercurial salt have produced ptyalism; traces of iodide of potassium inhaled are found in the urine, and turpinal and santal give to the urine the characteristic odor of the violet, and modify catarrhal conditions of the bladder.

Though the apparatus was first intended for the administration of nitrate of silver only, and this still occupies the first place, various other medicines have been used, such as iodoform, phenol, phenol-camphor, iodine, etc. Among these, for the sake of brevity, I shall speak particularly only of the first. Experience with it has extended over some three years in Europe, by such men as Dr. Bidentkop, State Physician of Norway; Dr. Bugge, of Ringsacker, C. Blomberg, Physician in charge of National Hospital of Norway; Dr. Leij, member of the Society of Medicine, Society of Hygiene and Public Medicine of Paris, France, and others. The latter in October, 1889, wrote to Mr. Störmer as follows: "I have been using these last eight months your inhaling apparatus, and am very much pleased with the results. In all catarrhal affections, laryngitis, chronic bronchitis, pharyngitis, rhinitis, etc., its effects are remarkable, prompt and of incontestible efficacy. It is a unique and marvellously appropriate means of enabling inhalations of medicinal powder to be carried deeply into the respiratory organs, a result never before obtained. I believe that this power of deep penetration, being undeniable, if the bacteria and the bacilli of well characterized diseases must be attacked before they have time to infect the organism, it is with this instrument it should be attempted, and that with it one may hope to succeed." Later, in the *Bulletin de Thérapeutique*, March 15, 1890, Dr. Leij reports the clinical results of his use of the inhaler as follows:

"Since January 31, 1889, when we placed the Störmer apparatus in our clinic, we have subjected to this treatment one hundred and nine patients, whom we will divide into two classes, those having and those not having tubercles:

First Series.

Pulmonary phthisis . . .	53
Phthisis of larynx . . .	6
	—
	59

Results.

Died	11
Cured	18
Relieved	15
Disappeared or stationary . .	9
Still under treatment . . .	6
	—
	59

"The eleven who died had reached the third stage of the disease, and only a few treatments were possible. As for the others the improvement was steady, and the average was three or four months with eighty or ninety treatments. The microscopical examinations of the sputa was made several times during the treatment for those having tubercles, and we found that, after five or six weeks, the bacilli had sensibly diminished, while in those cases pronounced cured they had altogether disappeared at the end of the third month.

Second Series.

Chronic laryngitis . . .	19
Bronchial catarrh . . .	14
Nasal "	5
Purulent pleurisy . . .	3
Asthma	9
	—
	50

"All the patients of this series have continued the treatment until cured, the treatments varying in number from twenty to thirty."

Eliminating in the first series the eleven cases which were too far gone to be benefited, and the six reported as still under treatment, there remain forty-one cases; and it is seen that forty-four per cent. of these were cured—a showing which no other method of treatment can make, and which may encourage us in the hope that some time some of the odium which has attached to our treatment of this dreadful disease may be removed.

The instrument is new in this country. In November, 1889, Mr. E. Hoell, exclusive agent of the Störmer Inhaler, established in Chicago an institute to demonstrate its use and effectiveness, employing a competent physician to diagnose and prescribe for

each case, and physicians were invited to call and to investigate or to send patients for treatment. In answer to my inquiries, Dr. B. M. Behrens, who first acted as physician in charge, wrote me, under date of May 12, that he had been highly impressed with the marvellous apparatus as being undoubtedly a thing with a great future. In the short time he had used it he had seen its best effect in atrophic conditions of nose and throat, and when the atrophic condition has been of not too long standing, with much wasting of tissue.

Dr. F. E. Crafton, of Chicago, endorses the language of a colleague abroad, who says: "We recognize the right of any one to inquire if the patients we consider cured are so in fact, and whether they may not fear a return of the disease. In most cases we have observed the process of the healing and cicatrizing of the lesions. We have satisfied ourselves by percussion and auscultation of the fact of the slow but steady and gradual disappearance of the pathological symptoms and of the bacilli, and after the lapse of many months, after the treatment has been stopped, these phenomena being still more manifest, we believe ourselves authorized to consider these cases cured."

Dr. B. Meyer, of Chicago, also expresses warm appreciation of the usefulness of the apparatus and method.

A partial list of patients treated at the Chicago Institute since January 1, indicates that every case treated has been relieved or cured, none remaining stationary or retrograding. The Institute being merely for the demonstration of the apparatus, the manager has made no special effort to let the work be known, except to the medical societies, physicians, etc.

My own experience with the inhaler is yet too limited to be of great value, but little more than a month having elapsed since I first saw the apparatus. I have prescribed its use in cases of catarrh, chronic follicular pharyngitis and bronchitis, and have used it in my own person for subacute and chronic laryngitis. Having been troubled for years with the chronic form, upon recently taking cold I suffered a violent exacerbation, attended with intense irritation and oppression of the respiration. A single treatment sufficed to relieve the violence of the symptoms, and three to restore me to about the usual conditions; but continuing the treatments in a rather desultory manner for the benefit of the chronic trouble, I have

found my voice improving, so that I can now use it better than for a long time. In a similar case of one of my patients, where the patient was unable to speak aloud, the voice was restored in three treatments, whereas in previous attacks two or three weeks had been required for the same end. In every case that has come under my observation the patient has expressed gratification at the obvious effect as well as the agreeableness of the treatment.

The propositions of this paper, then, which I believe can be successfully maintained are:

1. By means of an impalpable dry powder, or a vapor-laden atmosphere, we may more surely reach diseased membranes than in any other manner.

2. Heated air is capable of holding medicinal substances in these forms while they are conveyed to the extreme ramifications of the bronchi.

3. The effect can be proportioned to the susceptibility and requirement of each case by the strength of the solutions.

4. Heated air acts as a stimulant and assists the action of the contained remedies.

5. The Störmer Inhaler fulfills the indications for administering medicines in the form of powder or vapor.

6. Reports of its use thus far received indicate that it gives promise of great utility in the treatment of incipient phthisis and of nasal and bronchial troubles.

7. Its use does not preclude the administration of other usual remedies, but it may assist their action.

8. From the fact of absorption having been shown in a certain proportion of cases we may hope much in the way of systemic as well as local treatment.

As previously stated, nitrate of silver has been the principal agent used with this atomizer, because it is one of the best. It is given in solutions varying in strength from 1 to 1,000 to 1 to 100. The effect will vary with the susceptibility of the patient and the strength of the solution.

Not infrequently the inhalation produces perspiration, coughing, more or less violent, and at times a feeling of oppression across the chest, all of which soon pass away. If a strong solution has been used there may follow for some hours some irritability of the membranes, ending in increased and then decreased secretion. The general effect of the inhalations is rather exhilarating. In cases of acute coryza, simple sore throat,

or tonsillitis, the use of a solution of tincture of iron and chlorate of potassium checks it almost at once. In cases of diphtheria or croup it is obviously the best method of exhibiting our local remedies, be they simple lime water or sulpho-calcine.

I need not stop to enumerate the many remedies which may be used. The physician will not be at a loss to find something which he can use to advantage. Inhalations are usually made daily, although with some of the stronger solutions it is advisable to make them every other day. The sittings may vary from five to twenty minutes, but usually fifteen minutes is long enough with an equal interval of rest between.

EXCISION OF HEMORRHOIDS.¹

BY CHARLES B. PENROSE, M. D.,

PHILADELPHIA.

My object in presenting this paper is to urge the more general use of Whitehead's operation of excision in the treatment of certain cases of hemorrhoids.

In 1887, Mr. Whitehead, of Manchester, reported three hundred consecutive cases of hemorrhoids which had been successfully treated by the method of excision and suture. His operation is performed in the following manner:

1. The patient is placed on a table in the lithotomy position, with the hips well elevated.
2. The anal sphincters are then thoroughly paralyzed by digital stretching.
3. The mucous membrane of the rectum is divided at its junction with the skin around the entire circumference of the bowel.
4. The mucous membrane, with the attached hemorrhoids, is dissected from the submucous tissue, and the cuff or cylinder thus formed is dragged below the skin margin.
5. The mucous membrane above the hemorrhoids is then divided transversely, thus removing the pile-bearing area, and the operation is completed by suturing the upper margin of the severed membrane to the free margin of the skin.

The advantages claimed by Whitehead for this method of treatment are based on path-

ological and on surgical reasons. He considers that the internal hemorrhoids, which are generally regarded as localized distinct tumors, amenable to individual treatment, are, as a matter of fact, component parts of a diseased condition of the entire plexus of veins surrounding the lower rectum, each venous radicle being similarly, if not equally affected by an initial cause, constitutional or mechanical. The operation of excision is the only one which removes this whole diseased area. It is, therefore, demanded for this pathological reason. It is, in addition, surgically more perfect than any other method of treatment, because it provides for the readjustment of healthy tissues with the object of securing primary union and rapid convalescence. It does not leave the sluggish ulcer of the cautery, nor is it attended with the pain and slow convalescence of the ligature.

My experience with this operation is limited to ten selected cases. Only those cases were selected in which there existed a complete circle of hemorrhoidal tumors surrounding the lower margin of the rectum, since for such cases Whitehead's treatment of excision seems to be most particularly adapted.

The details of the operation are simple and easy to execute. In dividing the mucous membrane from the skin it is best to begin at the posterior margin of the anus in order to prevent the blood from obscuring the field of operation. No skin should be sacrificed, even though there appear to be redundant tags around the margin of the anus. The skin always retracts somewhat and the tags shrivel and disappear before firm union has taken place. Failure to observe this rule may result in subsequent serious trouble. Kelsey reports the case of a woman who had been subjected to a so-called Whitehead operation and who presented herself to him with a complete circle of excoriated mucous membrane, extending for one inch outside the anus. It is probable that in this case the operator had sacrificed too much skin. On the other hand, the upper section of the mucous membrane should be made in the same horizontal plane throughout, in order to prevent subsequent ectropion ani. The dissection of the mucous membrane from the underlying tissue is exceedingly easy except in some cases of old—or long standing—piles. The attachment of the submucous tissue is very loose, and separation can be effected with

¹ Read before the Philadelphia County Medical Society, September 24, 1890.

the finger or with the handle of the scalpel. It is not always possible to dissect the piles completely from the underlying structures, as they may involve not only the mucous but the submucous tissues, and in such cases it is necessary to cut partly through the piles until the healthy mucous membrane above is reached. Repeated attacks of inflammation of course render closer the adhesion of the pile area to the underlying structures. In one of my own cases, where the piles had existed for forty years and had frequently been inflamed, the adhesions to the two sphincters were so close that a few muscular fibres were cut away during the removal.

The amount of blood lost during the operation is surprisingly small. Whitehead states that he has often operated on severe cases and not found it necessary to twist a single vessel. In five of my cases no hemostasis was necessary. Bleeding is avoided by adhering closely to the mucous membrane in the dissection, as the larger arterioles lie beneath the submucous tissue. The arterial bleeding occurs in those cases of old piles which have been subjected to previous operation or to attacks of inflammation, and in which dilatation of the rectal and anal arteries has taken place secondary to dilatation of the hemorrhoidal veins. The bleeding from the upper divided edge of the mucous membrane can be reduced to a minimum by following Whitehead's method of inserting the sutures as each portion is divided, or by adopting Marcy's plan of introducing a circle of shoemaker stitches of catgut around the mucous membrane above the piles before cutting the mass away. Whitehead's advice is in all cases to remove the complete cylinder of mucous membrane, whether or not the whole of this area appears to be diseased. He gives this advice for the reason which I have already stated, that he considers the individual piles as but part of a general pathological condition, involving all the lower hemorrhoidal veins of the rectum. Whether we accept this pathological view or not, it is best to follow this plan, and to make a complete circular division of the mucous membrane, as by this method the best surgical results are obtained and ectropion prevented. I have seen a case in which only one-half of the circumference of the mucous membrane of the rectum was removed, and a few hours after the operation an oedematous swelling formed in

the other half, which has now resulted in a hemorrhoidal tumor almost as annoying as the one for which the operation was performed. In attaching the mucous membrane to the skin, Whitehead uses the interrupted silk suture. He never removes the sutures, but allows them to ulcerate through—a process which is very easily accomplished. In my own cases I have used the continuous catgut suture.

The treatment of these cases after operation is very simple. It is rarely necessary to use opium or the catheter. An opium and belladonna suppository introduced immediately after the operation, is in most cases all that is required. The bowels can be moved in from twenty-four hours to four days, and with very little pain. Absence of pain after Whitehead's operation is due to the thorough paralysis of the sphincters, and to the fact that no source of irritation is left beyond that of a clean linear incision, united without tension and without strangulation of tissue.

A glance at the histories of my own cases shows that they were all cases of aggravated hemorrhoids, in which the piles covered the whole circumference of the lower part of the rectum. In all the cases the disease had existed for many years, and two had been subjected to previous operation by the ligature. In only one case was there anything like free bleeding during the operation. In all the cases a suppository of one-half grain of extract of opium and one-half grain of extract of belladonna was introduced immediately after the operation, and this was all the opium required except in three cases, in which one-sixth grain of morphine was subsequently administered. The catheter was used in only three cases, and in these for a period not longer than twenty-four hours. The length of time the case is confined to bed depends to a great degree upon the social standing and the disposition of the patient. In my cases it varied from two to ten days. Every case should be able to sit up in four or five days, and to resume work in ten days or two weeks. The bowels were opened without pain in from twenty-four hours to four days after operation. No complications of any kind followed these operations. Union takes place quickly, and generally one dressing, taken off when the bowels are moved, is all that is necessary. In no case was there incontinence from paralysis of the sphincters, or any tendency to stricture, from contraction of the scar.

Since the publication of Whitehead's paper his method of operating has been tested by many surgeons. The operation cannot be criticised on surgical grounds, as it is certainly the most perfect plan of treatment, surgically speaking, which has been proposed. The immediate removal of the tumors, the coaptation of healthy tissues, and primary union, are substituted for slow strangulation by the ligature, or removal by the cautery and healing by granulation. The applicability, or the necessity, of this operation in all cases of hemorrhoids, is, however, open to criticism. If we accept Whitehead's views in regard to the pathology of piles, and believe that the whole venous plexus surrounding the anus and the lower end of the rectum, is in a pathological condition in every case of hemorrhoids, even though there may be present only one or two isolated tumors; then, of course, the complete removal of this area is indicated. But, that this view is not true is proved by the thousands of cases which have been permanently cured by the ligature and the clamp. The method, however, is indicated in all cases of aggravated hemorrhoids where the vascular tumors cover the whole or the greater part of the circumference of the bowel. In such cases the operation presents no great difficulties. Statistics show that it is at least as safe as operation by the ligature or the clamp, and it is certainly followed by a more rapid convalescence, and much less pain and discomfort.

STATISTICS OF ILLEGITIMATE BIRTHS.

BY WM. M. CAPP, M. D.,
PHILADELPHIA.

Statistics of illegitimate births, from the nature of the case, cannot always be accepted as accurate; yet in a general way they may be taken as indicating to some extent the social condition, the tone of morals and the state of education among the people at large. Under most of the governments on the continent of Europe, more attention than among us has been given to collecting data upon this subject and presenting it in suitable form for reference. Although the opinion seems to be prevalent that illegitimacy has been on the increase during the present century, careful students

of statistical tables and of social conditions after investigation have arrived at an opposite conclusion, and hold that there is from year to year a gradual improvement in the matter. W. G. Lumley, in an endeavor to settle the question in 1862, went into a most elaborate investigation of the subject, using in his researches all the official information obtainable, and concluded that the proportion of such births in Europe was neither as great as popularly believed, nor was it as great then as it formerly had been. The results of his labors are published with many formulated statements in volume XXV of the *Journal of the Statistical Society of London*. Dr. Newsholme, in his *Elements of Vital Statistics*, published in 1889, gives tables upon the subject covering the period of 1876 to 1886 in England, and draws therefrom similar conclusions as to that country. Among many other subjects this one receives its share of attention at the hands of Alex. von Oettingen in his volume entitled *Moralstatistik*, published in 1882.

In London in 1866, the proportion of illegitimate births to legitimate was 3.9 per cent., or about four in each one hundred, and this was also the average rate for the years 1876 to 1886 inclusive. During the same period in all England, Newsholme places the average at 4.8 per cent., and at 4.7 per cent. for the year 1886; while Block, in his *Treatise on Theory and Practice of Statistics*, for the years 1865 to 1883, inclusive, finds it to be 5.27 per cent.; and von Oettingen for 1865 to 1878, inclusive, finds the average proportion for England and Wales to be 5.43 per cent. So also the rate for Edinburgh is 8.9 per cent., while for all Scotland it is 9.7 per cent.

The figures for these countries are remarkable chiefly as presenting a variation from the general rule, which almost invariably elsewhere shows higher figures for the cities than for rural districts and for the country at large. As reasons for this anomaly in Great Britain we find chiefly the complete system of poor-laws and the extensive establishment of alms-houses in the rural sections. In Scotland there is an additional reason in the peculiarity of the law which legitimizes any children which may have been born to a couple who afterwards are legally married. This has its influence upon women who are willing to trust to their ability in the future to induce the man to consent to a legal marriage in case children are born. As a rule it is found, as would naturally be supposed,

that many cases of pregnancy outside of wedlock find their way to the cities, because there more ample hospital provision is offered and shame is more easily hid in the crowd. Besides that, cities receive the tide of surplus and floating population in all countries.

Ireland presents an average of 2.73 per cent. for the years 1865 to 1878, inclusive, which is probably the lowest rate of any population of considerable size in Europe, of which we have data. This sustains the reputation which its women have long enjoyed. Certainly in our own land, to which so many of its young women have come, they have given no public cause of complaint, and in the matter of personal chastity compare favorably with any other class. In their own country it is said that deviations from rectitude in this respect so overwhelm the delinquent with reproach and shame—and especially in rural districts—as to make a continued residence there in most cases practically impossible. Emigration, however, is always a ready resource to cover up the evidences of the fault.

The figures of illegitimacy for continental cities in recent years are as follows:

Vienna, 50.6 per cent. in 1867; 41.9 per cent. in 1877; 44.1 per cent. in 1879.
Prague, 49.6 per cent.
Rome, 44.5 per cent.
Stockholm, 40 per cent.
Moscow, 38 per cent.
Paris, 28.5 per cent.—(in 1886, 24.42 per cent.)
Copenhagen, 25 per cent.
Brussels, 22.5 per cent.
St. Petersburg, 20.2 per cent.
Lisbon, 21 per cent.

The figures for continental countries are given as follows, the averages being chiefly for the years 1865 to 1883, inclusive:

Bavaria, 15.24 per cent.
Austria, 13.5 per cent.
Sweden, 10.17 per cent.
German Empire, 8.7 per cent.
Norway, 8.49 per cent.
Prussia, 7.50 per cent.
Hungary, 7.45 per cent.
France, 7.41 per cent. (In 1886, 8.2 per cent.)
Italy, 7.55 per cent. (Ranged in 1863 to 1879 from 6.7 to 8.4 per cent.)
Belgium, 7.08 per cent.
Spain, 5.53 per cent.
Switzerland, 4.78 per cent.
Holland, 3.49 per cent.

Thus it appears that while in the city of Vienna about 50 per cent. of all births were illegitimate, in Austria at large the percentage was 13.5 per cent.; and while Rome had 44.5 per cent., Italy together showed 7.41 to 8.4 per cent.; Paris had about 28.5 per cent. and France 7.41 to 8.2 per cent.; Brussels 22.5 per cent. and Belgium 7.08 per cent.; Stockholm 40 per cent. and Sweden 10.17 per cent.; and so with other large cities, all of which, as compared with countries, show much larger percentages of illegitimate births.

In Great Britain a majority of the births take place in alms-houses, and are of course among the pauper population, and a very large proportion of the mothers belong to the illiterate class, being unable to read or write their own names. It must be borne in mind, however, that there those of more intelligence can easily evade the true record against themselves if they are so disposed, and reports doubtless are inaccurate. On the continent, among the lower classes probably less shame is felt, and the authorities are more attentive to accuracy in recorded information upon this point.

In most of the large continental cities lying-in hospitals are freely accessible to all, and recently, with a view to lessen the frequency of the crime of abortion and to remove some of the temptations thereto, regulations have been introduced, in some of the more prominent in Germany, for the preservation of the utmost secrecy for such mothers as desire it, so that their identity is not disclosed even to the hospital authorities. Each patient is known only by a number given her upon entering, a duplicate of which is written upon a sealed envelope in which she has enclosed her name, the address of friends and any other items she may choose, and which is returned to her unopened upon her departure from the hospital without mishap. The child is taken with her, or may remain a ward of the State at her option.

The practice of keeping large standing armies discourages marriage, and some of the laws, by placing obstacles in the way, have had a similar effect and probably in a considerable degree have increased the proportion of illegitimate births; for, as has been shown by other writers, nature in her efforts to people the earth will not be thwarted, and population increases in spite of the artificial restrictions of convention or civilization. Indeed, as the foundling asy-

lums contribute so largely to the ranks of the armies, it has not been to the interest of the countries requiring large bodies of men to be constantly in camp and fortress, to strenuously discourage illegitimacy. The recognized system of concubinage in most of the large cities of Europe also tends to increase the proportion.

If the food supply is the ultimate factor in regulating the number of legal marriages in any given time in a country, it may in like manner influence the percentage of illegitimacy, as some of the statisticians have undertaken to show in their tables. Low wages, scarce food, little work and enforced idleness, may make the attainment of honorable marriage appear beyond reasonable expectation, and so offer an apology for license.

The official figures from which information on this subject is obtained, do not embrace abortions, premature births and still births. Allowances also are to be made for misrepresentations which render the records inaccurate. To this extent the statistics come short of being worthy of absolute reliance.

In our own country statistics upon the subject are not obtainable, or if so, cannot be relied upon for accuracy, owing to loose methods in recording them, and to the facilities allowed for misrepresentation, which, on account of public opinion, is most generally resorted to. Hence comparisons cannot be made with other countries. Doubtless the general absence of foundling asylums, the restrictions often imposed in the admission to lying-in hospitals, and a general feeling of aversion to delinquent mothers and fatherless children cause the crimes of abortion and infanticide to prevail more among us than in countries where more practical and broader ideas of charity and more unprejudiced impulses of humanity are in vogue.

In Philadelphia, up to the present time, no efforts have been made to keep records upon the subject except for the years 1888 and 1889. In the former the total number of births was 26,296, of which 649 or about 2.8 per cent. were reported as illegitimate; in 1889 the total number was 27,491, of which 814 or about 2.9 per cent. were illegitimate.

—Euxanthone, the coloring principle of the very expensive yellow Indian dye known as piuri, has been artificially prepared by M. Groebe, a Swiss chemist.

FOREIGN CORRESPONDENCE.

LETTER FROM ENGLAND.

SHREWSBURY, September 3, 1890.

"The bold situation of the town, girdled by the health-bearing breezes of a beauteous river, gives a striking and majestic appearance to Shrewsbury." The foundation of this town goes back to about the year 600, and it is about the only town in England which was not founded by the Romans. The ancient history of this city is particularly interesting. One of the most decisive battles in early English history was fought here. Shakespeare in his "Henry the Fourth" mentions it. The ancient black and white houses are probably as interesting to one from the new world as Melrose Abbey or the walls of Chester. These timber houses, of which there are many, date back to 1500. Many have dates placed upon them telling the year in which they were built. I noticed several 1505-1534, etc. They have projecting stories sustained by elegant brackets and the angle uprights enriched with small pointed arches carved with trefoil, the wood black and interspaces of white plaster. Shrewsbury is not on the line of the ordinary route of travel; and the globe-trotting American has not as yet found out its beauties, and much less would one expect a wandering physician or surgeon to turn his footsteps towards this very ancient and unique English city, to find anything new or novel in his line of work. And yet the town is not without its medical history; for here Henry I (1100) built a church where services were held for a *hospital* of lepers. St. Giles's Hospital was originally established for the reception of persons afflicted with leprosy, which disease was brought back from Palestine by the Crusaders. Henry II granted to it thirty shillings yearly (about \$400 of modern currency) of the rent which he received from the sheriff of Shropshire, towards the support of the infirm or diseased occupants. While leprosy is a disease not known in England to-day, yet the original grant of money is still paid; for "the power we have always with you." Shortly after the founding of the above hospital Earl Roger de Montgomery built and supported an infirmary within the precinct of the Abbey "as an asylum for diseased and superannuated monks," a fragment of which building yet remains. The present hospital is a large, commodious building with all the

modern conveniences, where aseptic surgery is just as successful as the antiseptic. At the top of the building, on a tablet, is the following inscription:

Salop Infirmary.

Established 1745.

Supported by Voluntary Subscriptions and Benefactions.

Rebuilt 1830.

The eye and ear hospital was founded in 1818. To-day one of the finest and most thoroughly equipped buildings in the kingdom occupies the place of the old one. It was found that its usefulness necessitated a larger building, and the Board of Trustees in 1881 built the present hospital.

Dr. Wm. Charnley, the surgeon to the institution, is best known to fame as the author of the article on Retinoscopy in Morton's book on Refraction. Dr. Charnley's reputation, among the English writers on refraction as a master of mathematics, is so high that he has during the last few years corrected and revised no less than three well-known treatises on refraction. Dr. Charnley, like many others who have given retinoscopy some years of trial, finds that it is not easy to learn nor easy to execute; and, while it may be of undoubted advantage in cases of illiteracy of young children, and in hospital work, yet in private practice it is useful only in confirming what trial lenses have already told one.

The number of new cases applying for relief at the hospital here this year has been about two thousand. There have been two hundred and sixty-five chief operations, including forty-seven extractions of cataract and forty-eight iridectomies. Of the cataract operations, forty-four were followed by good vision. Dr. Charnley, in performing cataract operations, makes a modified Graefe cut with a very small iridectomy. The patient's eyes are immediately bandaged with very light aseptic dressings. After twelve hours these dressings are removed, the lower lid of the operated eye is depressed to allow the accumulated tears (if any) to escape; then the eye is bathed with a mild boric lotion, followed by one instillation of atropine (four grains to the fluid ounce). The eye is not examined for twenty-four hours, when a similar treatment is applied. After three days the bandages are dispensed with, the patient only wearing a shade, the light in the room being modified by blinds. As is usual with all careful surgeons, the first two

dressings are made by Dr. Charnley; the trained nurse looks after the subsequent treatment. Dr. Charnley regrets that his success in chronic glaucoma has been almost nil. The subconjunctival operation is performed for strabismus. The full emmetropic correction is given, and the glasses are ordered to be worn constantly. Ulcers of the cornea are treated with that standard remedy, yellow oxide ointment, a fuller strength ointment, with atropia sulphate combined, being prescribed. Some observers have noted the predisposition of the Welsh nationality to *retinitis pigmentosa*. At this hospital, where at least one-third of the patients are Welsh, this disease is not common. A curious case of connective-tissue growth in the fundus oculi presented itself on the day of my visit. The singular part of the young man's history was, that he discovered only two days before that he was totally blind in that eye (the left one). An examination with the ophthalmoscope revealed the growth. Had this young man received an injury to that eye, he would have been under the impression that the injury had caused the loss of vision. Yet he had never used his left eye since birth, as it is now well understood that such growths are embryonic.

The management of this hospital is most excellent, and, to prevent an indiscriminate abuse of its charity, every patient is obliged to bring a recommendation from some annual subscriber that he is deserving and worthy. Accident cases are exempt from this rule. They, however, after one treatment, are obliged to conform to this regulation. A private ward is in use for patients who can pay. The institution, being essentially a charitable one, is kept for all the purposes for which it was founded; and, in justice to the "proud Salopians," it is not abused.

L. WEBSTER FOX, M. D.

CHILD SUICIDES.—From January 1 to September 1, 1890, 62 children—46 boys and 16 girls—committed suicide in Berlin. Of this number 24 had attained the age of fifteen, 14 their fourteenth year, 9 their thirteenth, while 7 were only twelve years of age, and one had not attained the age of seven. In most of the cases the immediate cause for the act remains a secret, but it is supposed to have been due to exceptional severity on the part of servants or teachers.

PERISCOPE.

Treatment of Pertussis with Bromoform.

Dr. Louis Fischer, attending physician to the Children's Department of the German Poliklinik, New York, says, in the *Medical Record*, September 6, 1890:

Bromoform, CHBr_3 , is a colorless liquid, boiling at 151°C ., and solidifying at 2.5°C . Its specific gravity is 2.83 at 0°C . It is produced by the action of bromine upon alcohol in the presence of an alkali. In practice milk of lime is saturated with bromine, alcohol added, and the mixture distilled. In 1849 Nunneley and Schuchard called attention to bromoform as a possible anæsthetic, and in 1869 Rabuteau brought the drug forward as a new anæsthetic.

Given to the lower animals by inhalation or hypodermic injection bromoform produces rapid narcosis, in which, according to the researches of Von Horoch, the breathing is not noticeably lessened and the pulse remains full, regular and strong. Although the blood-pressure is distinctly reduced, the heart is said not to suffer from the influence of the drug, and the peripheral vagi are not affected. Further, as powerful irritation of a sensory nerve has no influence upon the blood-pressure, it is probable that the fall is the result of vaso-motor paralysis, which is confirmed by the rapid sinking of the temperature. The excitability of the cerebral psycho-motor centres and the general reflexes are entirely destroyed. Von Horoch has used the bromoform as an anæsthetic in several cases in man. The most marked symptom was excessive cyanosis of the face. The urine passed after recovery contained bromine.

More recently Dr. Stepp, of Nuremberg, applied bromoform successfully in the treatment of whooping-cough, and still more recently Professor Senator, through his assistant, Dr. Loewenthal, of Berlin, published an article in the *Berliner klinische Wochenschrift*, heartily endorsing Dr. Stepp's treatment and recommending its further use, promising to again publish his results. He noticed in some cases a decided benefit as early as the second day of treatment, in others on the third or fourth day, depending on the severity of the case. Vomiting disappeared in the first week of the bromoform treatment. Bronchitis, complicating tussis convulsiva, seemed to be benefited also dur-

ing the course of the treatment. In from two to four weeks children were usually discharged cured. Appetite also was better during the course of treatment. Children with previous morbilli, also delicate ones, experienced equally beneficial results. Some cases had the treatment interrupted by a complication setting in, e. g., morbilli, pneumonia or varicella. Relapses occurred where bromoform was not administered long enough; in some cases sleepiness was observed during the course of treatment. In a case where a toxic dose of CHBr_3 was given, the following symptoms were noted: Contracted, pin-point pupils; small, compressible pulse; pale countenance; cornea not reacting; on auscultation long, deep inspiration; hardly any expiration was noticed; the heart-sounds were scarcely perceptible. The child reacted immediately on giving a hypodermic injection of sulphuric ether.

He describes sixteen cases to show the effect of bromoform in his practice, and adds that the cases illustrate the different conditions of children attended; patients of all kinds were taken at random, although most cases were seen in the Children's Department of the German Poliklinik; several cases were also seen in the New York Polyclinic. Most patients that were treated lived in tenements, in badly ventilated apartments, and were, as a rule, poorly nourished subjects, as are usually most dispensary patients. Several cases with the best hygienic surroundings possible, with excellent nursing, the best of food and strict sanitary regulations, were also attended, and Dr. Fischer could notice no more benefit than he did in the ordinary class living in tenements. He does not pretend to say, however, that, given the best hygienic surroundings, the best of care, proper dieting, etc., such cases might not, in the long run, be much easier treated, although in fifty-one cases he noticed no shortening of the disease where better food and air were added. In all his cases he made it a rule to urge the mothers or the nurses to count the number of attacks of coughing in a given time, say six, or usually twelve hours, as only by knowing exactly how many times a child coughed could the treatment be regulated. He also had the number of severe and the number of mild attacks counted. In giving bromoform after eating, he refers, in cases of infants, to giving it after nursing; but it made no particular difference whether it was given shortly

after feeding or an hour after feeding. In several cases he gave bromoform before meals, and noticed no bad effects from the same, although giving it after feeding was preferable. Baginsky, after going into detail about the etiology of tussis convulsiva, sums up by saying that it is an infectious catarrh, caused probably by a micro-organism, which has not as yet been found. There is no question, however, as to the infectious nature of whooping-cough, and children all through the treatment should be isolated from healthy ones as thoroughly as possible. Dr. Fischer has in all used bromoform in fifty-one cases, and still has several under observation; and thinks there is no question but that it is the best known remedy when properly applied. Owing to its discoloration and extreme volatility, he has administered it from dark bottles, or bottles protected from the light and very well stoppered. If the bromoform turns brown, then it contains free bromine and should not be administered.

The doses required were the following: For children under and up to one year of age, two to three drops three times a day; children from two to four years of age, three to four drops three or four times a day, depending on the severity of the case; children until eight years of age, four to six drops three or four times a day. The doses were usually increased on the third day, sometimes after the fourth day of treatment, and in very severe cases on the second day of treatment, by gradually adding one drop to the usual dose. The time required for a cure was variable; in some cases ten days of treatment was enough to effect a cure, others required almost four weeks. About seventy-five per cent. could be discharged cured between two and three weeks after steady treatment, where no other complications existed.

Bromoform should be given in a small teaspoonful of water. Owing to its weight it sinks to the bottom of the spoon, and great care must therefore be taken to see that the child swallows the bromoform, and that this does not remain in the spoon. Dr. Fischer did not experience any difficulty in giving it to children, as bromoform has a pleasant taste and was very readily taken by such patients.

Death from Paraldehyde.

The *Lancet*, August 23, 1890, reported that on August 10, a patient in the Fever

Hospital attached to the Cork Workhouse died from the effects of paraldehyde. The deceased, twenty years old, was suffering from typhoid fever, and but slight hopes were entertained of her recovery. As she was suffering from violent delirium and sleeplessness, a hypnotic was prescribed, and the temporary nurse overlooked the directions she had received, and, instead of giving one teaspoonful, administered from six to seven teaspoonfuls. In about five minutes the patient fell into an unconscious state, and, despite medical assistance, remained in that state for four hours, when she died. The quantity of paraldehyde that was administered is not mentioned, but it may be supposed the deceased girl took from six to seven drachms.

Effect of Exercise.

Dr. Thomas M. Bull, in the *New York Medical Journal*, August 9, 1890, says: The high grade of general health which a proper amount of exercise tends to develop is the best possible safeguard against the encroachment of morbidic germs. This is shown well in the case of ordinary colds. I have repeatedly seen people who, before taking exercise regularly, were afflicted with colds nearly all the time, but afterwards had a great many fewer or none at all. And right here I should like to mention a little plan to avoid taking cold when exposed to a draught. Many of us are frequently exposed to draughts when we are in company and cannot avoid them. If a person in this position would rapidly and strongly contract the large body muscles, or opposite plates of those attached to the limbs, by means of which a great deal of force may be exerted and but little motion caused, he will have no fear of a draught producing a chill. By contracting in this way the muscles which cause adduction of the arms while the arms are at the side, I can in a short time produce a very comfortable state of perspiration, and certainly ward off any bad effects of a draught.

In regard to the effect of exercise on diseases of the heart, I have seen cases which were diagnosticated by several physicians as mitral regurgitant gradually grow less prominent and disappear. I have often seen cases where the heart sound was roughened, accentuated, or indistinct, improve rapidly and acquire a perfect sound when the only change was in taking regular exercise. In

the case of hearts, when the only trouble was excessive rapidity, intermittency, or irregularity, I have seen improvement follow very rapidly. And I believe that one of the best prophylactics against the development or extension of almost any hereditary or organic disease is muscular exercise properly taken. And, in conclusion, I should like to say that, in my opinion, the value of exercise is not exceeded by that of any single therapeutic measure. I am certain that all of us have seen patients for whom it would do more than any other thing consistent with their lives and occupations.

And if we were able to intelligently prescribe, and so get all the good possible out of exercise, I am confident we should be able to do many patients more good than in any other way.

Purgative Treatment of Peritonitis.

In a paper on the "New Treatment of Peritonitis," in the *Kansas City Medical Index*, July, 1890, Dr. Emory Lanphear strongly advocates the abandonment of the old method of rest and opium and the adoption of purgation with saline cathartics or operation. He specially cites the practice of Dr. John H. Musser, of Philadelphia, who gives a summary of twenty-six cases treated with small doses of calomel, olive-oil enemata, etc., without opium (except one or two small doses of morphine and atropine when pain was excessive); nineteen recovered without surgical interference, four convalesced after laparotomy, and three died. His method consisted in local blood-letting until pain is much relieved; if more than forty-eight hours have elapsed, a blister; liquid diet absolutely; stimulants administered freely to prevent collapse; cracked ice, lime-water and iced champagne for thirst, if desired, but sips of hot water or hot whiskey are better; calomel in small doses hourly until the bowels are moved freely; veratrum or aconite for fever; whiskey, digitalis, atropine and amyl nitrite if collapse be imminent. While Dr. Musser's cases did not receive salines, the plan of treatment was the same—that of purgation instead of opium—and the results were startlingly favorable, for of these cases fifteen were desperately ill at the first visit of the doctor.

Many more cases, especially following laparotomy, might be given with like favorable results, but these suffice to show that prominent men are changing from the opium

to the purgative treatment of this disease, and with a greatly decreased mortality. Recalling, then, the experience of my preceptor, remembering my own cases and adding thereto the accumulating weight of evidence, my conclusions are that the saline treatment should be adopted early in simple, acute peritonitis; that small doses of calomel may be given to mild purgation in cases seen after the disease is fully developed; that cases which fail to be relieved by cathartic measures should receive early operative interference; that whenever peritonitis has gone on to that stage where the formation of pus is known, or even suspected, to have taken place, abdominal section and drainage are imperatively indicated; that when the existence of tubercular peritonitis is diagnosed, or strongly suspected, operation (exploratory incision) is justifiable.

Opium is only indicated in the second stage of peritonitis, and then not because it "forms a splint" but because it relieves pain, sustains the heart and prevents shock—thus combatting the tendency to death.

Atropine and Potassium Cyanide.

The *Western Druggist*, August, 1890, says a young man at Halle, Germany, recently attempted suicide by swallowing a fatal dose of potassium cyanide in solution, and to make assurance doubly sure, followed it up by a solution of atropine. This, however, was too much of a good thing; the two deadly poisons had it out between themselves, and the rash court scribe, after a few fainting spells and a sense of weakness, was discharged from the city hospital on the following day none the worse for his physiological experiment. He received no medical treatment.

Pasteur Statistics.

The Pasteur Institute in Paris reports (*Bulletin Medical*, August 17) that 172 persons were treated during June, 1890. In 57 cases the rabid conditions of the bite was tested experimentally (according to Pasteur's theory); in 80 cases it was asserted by veterinary surgeons; in 35 the animals were only "suspected" of rabies. The animals that did the biting were: dogs, 154 times; cats, 7 times; horses, 7 times; asses, 3 times. In one case the bite was by a child affected with rabies.

THE MEDICAL AND SURGICAL REPORTER.

ISSUED EVERY SATURDAY.

CHARLES W. DULLES, M.D.,
EDITOR AND PUBLISHER.

N. E. Cor. 13th and Walnut Streets,
P. O. Box 843. Philadelphia, Pa.

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When it is desired to call our attention to something in a newspaper, mark the passage boldly with a colored pencil, and write on the wrapper "Marked copy." Unless this is done, newspapers are not looked at.

The Editor will be glad to get medical news, but it is important that brevity and actual interest shall characterize communications intended for publication.

MIXED ANÆSTHESIA.

Since Nussbaum, in 1877, proposed the hypodermic injection of morphine previous to the induction of anæsthesia by chloroform, there have been a few who resorted to this procedure. More recently Dastre, a French surgeon, has recommended a combination of morphine and atropine for the same purpose. In *Le Mercredi Médical*, July 30, 1890, Reynier reports a very unfortunate experience with this use of morphine and atropine previous to chloroform anæsthesia. Dastre maintained that the syncope produced by chloroform is due to the inhibiting action of the pneumogastric end of its centres in the medulla, and therefore proposed to paralyze this apparatus with morphine and atropine. Aubert obtained satisfactory results in experiments upon men, and it was owing to these that Reynier tried

the method. The patient was a young girl, sixteen years old, pale and chlorotic, who underwent a short operation for tuberculous osteitis. It was over in ten minutes. She had inhaled about seven drachms of chloroform and had received previous to anæsthesia one-twelfth of a grain of morphine and one two hundred and fiftieth of a grain of atropine. The operation over, sleep was prolonged. Reynier says he was not uneasy, for Dastre said that this was the rule and was one of the advantages of the method. Reynier therefore left the ward, but in about two minutes his interne summoned him in haste. The respiration of the patient had abruptly become more rapid, then soon afterwards very feeble, and when Reynier arrived it had almost ceased, and so had the heart beats. For three hours artificial respiration and hypodermic injections of caffeine were used; at times it was hoped that some spontaneous respirations were obtained. But there was no help for it; the patient was dead. The autopsy, conducted by Verneuil, disclosed nothing abnormal. The chloroform was analyzed and was found pure.

Reynier expresses the opinion that there was a progressive intoxication of the centres in the medulla by the chloroform, and that the morphine and atropine deprived the chloroform of one of its advantages, namely, its rapid elimination. He has endeavored to prove this opinion experimentally in the laboratory. He thinks that dogs bear atropine and morphine very well, but chloroform badly; whereas just the reverse is true in man, who bears chloroform well, but morphine and atropine badly.

It should never be forgotten that even the safest anæsthetic is dangerous. But experience in the administration of an anæsthetic goes far to lessen its dangers. Perhaps the surgeon will have the fewest accidents who confines himself to one anæsthetic and so studies the administration of that one that he becomes master of it. Chloroform is undoubtedly more widely used than any

other anæsthetic agent. The path by which death takes place after its use is still in dispute, and until that is determined beyond question it will be hard to decide what part of mixed anæsthesia—if any—is directly responsible for a death following it. Deaths attributed to chloroform alone are too common and mixed anæsthesia has been used with entire success too often for the case described above to be regarded as proving that it is more dangerous than useful in surgical practice.

BITE OF ANIMALS APPARENTLY NOT RABID.

Drs. Roux and Nocard, assistants of Pasteur, have recently been endeavoring to answer conclusively the question whether or not a person bitten by a dog which, at the time of the biting, shows no symptoms of rabies, but which developed plain manifestations of the disease three or four days later, runs any risk of becoming rabid.

They conducted a series of experiments the result of which are reported in the *Annales de l'Institut Pasteur* No. 3, 1890, and are quoted in the *Wiener Medizinische Presse*, July 13, 1890. An "emulsion" of the spinal cords of rabid dogs was injected into the anterior chamber of the eyes of healthy dogs, and as soon as the latter showed the first symptoms of rabies—an elevation of temperature—their saliva was injected into rabbits and guinea-pigs. The saliva of the rabbits and guinea-pigs was found to be virulent three days before any symptoms of rabies had become manifest. The question now arose whether or not the seat of injection (the anterior chamber of the eye) favored the rapid infection with the saliva. Subcutaneous inoculations were then tried, and it became evident that the saliva was virulent thirty hours before the appearance of the first symptoms of rabies. Finally, in subdural inoculations the saliva remained inert for seven days and became virulent synchronously with the appearance of rabies in the animal. The amount of virus in the saliva

increases with the advance of the disease. Roux and Nocard claim, therefore, that the result of their experiments show that a dog may be considered dangerous three days before any symptoms of rabies have manifested themselves.

This is a perfectly typical example of the mode of reasoning of the Pasteur Laboratory, so far as the account we have seen goes. There is no evidence whatever that any of these animals experimented on had rabies, or that any of them ever had any of the symptoms of what the Pasteur disciples *call* rabies, except an elevation of temperature; or that any control experiments were made to show what effect would be produced by inoculating saliva from animals which had not been sickened by the method used in Pasteur's Laboratory to produce the artificial disease which there is called rabies.

It is a simple announcement in true Pasteur style, unaccompanied by proof of its reliability and calculated to increase a foolish fear which has proved already very dangerous to the world and a source of great profit to Pasteur. It is calculated to arouse the anger of those who labor to heal diseases, when they see these experimenters launching one dogmatic assertion after another, to multiply cases of a disease which was less frequent and less fatal before ever they meddled with it.

THE IMMEDIATE REPAIR OF LACERATIONS OF THE PELVIC FLOOR.

Although this subject has been before the profession a long time, we believe that very erroneous views prevail only not concerning the repair of injuries of the pelvic floor, but more especially concerning the nature and frequency of such injuries. It is still not unusual to hear the gravity of such injuries measured by the number of fractions of an inch of skin involved in the lesion, and to hear it gravely proposed to repair the same by introducing one suture. Until the real nature of injuries of the pelvic floor is

investigated by the practitioner, and the extent to which the muscles of the perineum, and more especially the levator ani, are involved in each injury, so long will inefficient means be recommended in the treatment of these lacerations.

In the *Medical Record*, of August 30, 1890, Dr. Irwin H. Hance contributes a well-written article on this subject. He divides lacerations of the pelvic floor into three classes: 1, Median; 2, those involving the skin over the perineum and extending up one or both sides of the median line of the vagina; and 3, lacerations of the posterior vaginal wall without rupture of the skin—tears usually V-shaped, one arm of the V being longer than the other. Had Dr. Hance added, as a fourth-class, laceration and over-stretching of the levator ani muscle, without superficial laceration of either mucous membrane or skin, his classification would be complete. The emphasis given the fact that simple median lacerations form an inconsiderable portion of the injuries of the pelvic floor, is specially to be commended, since this fundamental fact has a positive bearing on treatment.

In repairing these lacerations Dr. Hance insists upon the fact that the parts are to be sutured in their normal relations. To accomplish this, suturing is begun at the upper extremity of the tear—as in the secondary operation. He uses catgut, and insists on rigid antisepsis. This method of operating is unquestionably the only one which brings the severed tissues together in proper relation—with the exception perhaps of simple median tears which extend only a fraction of an inch up the vagina; and in these cases suturing is of little importance. Imagine the closing of a laceration extending one or two inches up the vagina, perhaps on both sides of the median raphe, and involving the levator ani, by sutures introduced from the skin surface of the perineum! One of two results must follow. Either the suture acts as a drawing-string and distorts the relation of the parts, or else it fails to

embrace the upper extension of the tear and leaves a pocket for the collection of lochial discharge. The choice of suture material is largely indifferent, as good results can be obtained with any reliable antiseptic solution, provided only that it is properly introduced.

It is high time that the immediate operation for the repair of lacerations of the perineum be properly conducted, and the practitioner cease to waste his time in drawing together a useless fold of skin before the injury of real importance—the lacerated levator ani muscle.

HERMAPHRODITISM, OR SEXUAL PERVERSION.

In the early part of September the newspapers contained an account of a case which was calculated to stimulate curiosity, and to excite interest in the mind of the general public. It was that of an hermaphrodite, or else of a sexual pervert. As the *Philadelphia Record*, September 3, tells the story, "Delbert Reynolds was born a boy twenty-two years ago at San Rafael. A short time ago he married a respectable blacksmith at Alena, and blossomed forth as Belle Hardman, a loving wife. Her husband is willing to make affidavit that she is a true woman, and the mother, Mrs. Reynolds, is prepared to swear that it was born a boy, and remained so for twenty years, doing boy's and man's work and associating with males as a rule. The transformation covered a period of eighteen months, and a San Francisco doctor, while amazed, vouches for the marvelous change of sex as an absolute fact. The only solution of the problem will be for he, she or it to become a mother. In the meantime the doctors, the neighbors and all the country round are asking, 'What is it?'"

We have investigated this case through a correspondent in San Francisco, and have learned from the family physician at San Rafael, Dr. Henry A. Du Bois, that he had never had his attention called to any mal-

formation in the young man, and had never examined his genitalia. Until lately the person had been considered a boy, and is said to have hair on his face. He is said to have married a young man, and to be living with him as his wife. Dr. Du Bois thinks he is a male, and that the present association is due to unsoundness of mind, or that it has been made in order to attract attention. It is said that the subject of this notice has refused to submit to a physical examination, and that his mother and friends regard him as a male.

It is to be hoped that more precise information will be obtained in regard to this case; because it will be interesting to know whether it is really one in which it is possible for a mistake to be made as to the sex of the individual, or one in which sexual perversion or a desire for notoriety has led to the union of two males.

BOOK REVIEWS.

[Any book reviewed in these columns may be obtained upon receipt of price, from the office of the REPORTER.]

THE PULSE. By W. H. BROADBENT, M. D., Senior Physician to, and Lecturer on Clinical Medicine in the Medical School of St. Mary's Hospital, London. Illustrated with fifty-nine Sphygmographic tracings. Small 8vo, pp. vi, 312. Philadelphia: Lea Brothers & Co. Price, \$1.75.

The author modestly states in the preface that this little book is for the most part a reproduction of the Croonian Lectures on the Pulse, delivered before the Royal College of Physicians in 1877. There are, however, some amplifications and additions, in particular of a chapter on the sounds of the heart.

After an interesting historical sketch of the pulse, the author takes up the consideration of the pulse, its production and significance. He declares that it is not an expansion of the artery with each so-called "wave" of blood, but that it indicates simply the degree and duration of increased pressure in the arterial system caused by the ventricular systole. The term "tension" means simply the degree of fluid pressure within the artery, putting its walls on the stretch. Arterial tension and blood pressure, therefore, mean exactly the same thing.

The three factors in the pulse are: the action of the heart, the elasticity of the great vessels, and the resistance of the arterioles and capillaries. The heart determines unconditionally the frequency and regularity or irregularity of the pulse, and, with certain qualifications, its force or strength. The great vessels act as an elastic reservoir and convert the intermittent jet issuing from the ventricle into a more or less continuous stream, impressing at the same time certain characters upon the pulse according as the elasticity of

their walls is perfect or impaired, and according as they are kept fully distended or only slightly on the stretch. The capillaries and arterioles, in their turn, by the varying resistance which they offer to the passage of blood through them, determine the mean pressure maintained in the arterial system and the character of the pulse, and influence materially the action of the heart.

After a chapter on the mode of feeling the pulse, the author takes up in successive chapters the heart-sounds in relation to the pulse: increased frequency, diminished frequency, intermittency and irregularity; the pulse as influenced by variations in artero-capillary resistance; low arterial tension; high arterial tension; the pulse in acute disease, in valvular disease of the heart, in structural disease of the heart, in aneurism, and in kidney disease. The concluding chapters are on Intermittent Albuminuria, and the Pulse in Affections of the Nervous System.

This brief statement of the scope of the book will give a good general idea of its contents. In speaking of the pulse of aneurism, Dr. Broadbent adopts the general view that a difference between the two radial pulses and a wave-like sphygmogram is significant of aneurism. Von Ziemssen has shown that this difference is the result of a narrowing of the orifices of the vessels coming from the arch, produced by atheromatous change, and that, while such narrowing may be found co-existing with aneurism, it is more frequently found apart from it in general arteritis deformans.

One who has not himself given close study to the pulse will be surprised, on reading Dr. Broadbent's book, to learn how much the pulse may indicate, and how important its indications are in the detection of disease. Perhaps no more hopeful sign of the progress of medicine could be given than this monograph; it shows how broad is the field of medicine, and at the same time how much is to be found in a small corner. We cordially commend the book to our readers.

LEÇONS CLINIQUES SUR LES MALADIES DE L'APPAREIL LOCOMOTEUR.

CLINICAL LECTURES UPON DISEASES OF THE LOCOMOTOR APPARATUS (BONES, ARTICULATIONS, MUSCLES). By Dr. KIRMISSON, Professor Agrégé of the Faculty of Medicine, etc. With 40 illustrations. 8vo, pp. viii, 550. Paris: G. Masson, 1890.

The author succeeded Professor Richet, in 1888-89, in the chair of Clinical Surgery at the Hôtel Dieu, where the lectures from which the present volume is made up were delivered. As indicated in the title, only the lectures on diseases of the bones, articulations and joints have been utilized in this way. The subjects treated include osteitis, osteomyelitis, hereditary syphilis of the bones, chronic inflammation of the joints (shoulder, hip, knee), syphilitic arthritis, Pott's disease, hydatid cysts of muscles, club-foot in its several forms, etc. The book gives an admirable presentation of the diseases named from a modern French point of view, and is a valuable addition to current surgical literature.

BURIALS WITHOUT DEATH CERTIFICATES.—It was lately stated in the British Parliament that fifteen thousand persons are buried annually without any medical certificate of death. The government has promised to inquire into the matter.

NEW REMEDIES AND APPLIANCES.

In this department, notice will be given of Remedies, Food Articles, and Instruments or Surgical Appliances of which specimens are sent to the Editor; it will bear the same relation to these articles that the department of Book Reviews now does to books.

Wyeth's Beef Juice.

It is seldom that a dietetic preparation so thoroughly agreeable as Wyeth's Beef Juice is put upon the market. It is decidedly the most palatable beef extract which we have ever examined. For its preparation nothing is required except the addition of a teaspoonful of the beef juice to about half a glass of cold water; and this makes it very convenient for administration. As compared with such preparations as Valentine's beef, it is very superior in nutritious quality, and we think that no one who has used that will regret it if he puts Wyeth's Beef Juice in its place.

CORRESPONDENCE.

Fences against Malaria.

TO THE EDITOR.

Sir: Under the quaint title of "Fences for Malaria," there is a paragraph in the *REPORTER* of September 20, 1890, in which the use of leafy hedges for intercepting malaria is referred to as an old and popular notion. To the fact that this notion is well-founded there is much testimony that is both interesting and curious. The readers of that charming series of lectures known as *Watson's Practice of Physic* find much in his discourse on intermittent fever to establish the prophylactic influence of trees, when situated about a dwelling, and between it and places known to be malarious. Physicians of the present day, who fail to acquaint themselves with this most attractive volume, miss a rich intellectual feast, and a great amount of useful facts and details not elsewhere presented in the same perspicuous and happy style. Here are gathered the records by many learned and careful observers in various places, of the influence of surroundings, direction of winds, elevation of land, and obstacles interposing in preventing the access of malaria. To this mass of testimony I add my own mite of experience.

In the autumn of 1848, after the subsi-

dence, for the year, of the fevers infesting the region, I took up my residence in a narrow valley, having a stream flowing through it, but subject to interference in its course by ledges of rock, mill-dams and other obstructions. I did not observe any malarial manifestations until August of the following year, when many cases suddenly presented themselves. As an unacclimated person, I would of course be especially prone to an attack, and this was confidently predicted by those who were "to the manner born." Knowing my peril, I adopted the maxims inculcated by the eminent author mentioned; I avoided the night air as much as possible, and when obliged to be out wore a silken handkerchief as an oro-nasal respirator, in the manner pointed out by him. I escaped the disorder, but had ample opportunity to study its phenomena as exhibited in others—several members of a family in given cases being simultaneously prostrated by it. The autumn of 1849 I dwelt adjacent to the same stream, but nearer its source. At this point, by reason of insufficient drainage-fall, and because of obstructions by rocky ledges and fallen trees, its waters spread over an area of several square miles. The submerged territory was lessened by droughts and increased by heavy rains, the rise and fall being intermittent during the autumn. I do not remember using the precautions resorted to the autumn previous, and became a victim to the prevalent baneful influence. I attributed my former immunity to the careful observance of prophylactic measures, and especially to the use of the veil. Though nearer the fen than at my former residence, the fever was not more rife than in that neighborhood. Whether I should have escaped had I used the precautions of the former year I know not: but I am still of the opinion that there is much in "Fences against Malaria" which is entitled to our regard and observance.

Yours truly,

ENOS T. BLACKWELL, M. D.,
Cedarville, N. J.

Knotted Umbilical Cord.

TO THE EDITOR.

Sir: The relative scantiness of literature upon the subject of knots in the umbilical cord leads me to report the following cases:

Case 1. Mrs. G., twenty-eight years old,

had had one delivery at term and one abortion previously. Nothing unusual about her labor, except the precipitate termination of both second and third stages. In the cord there two single knots several inches apart. On account of adhesions the knots could not be untied.

Case 2. Mrs. D., thirty-three years old, had had two deliveries at term and one abortion at the fifth month previously. Examination, on August 29, showed that the head was low, in L. O. A. position. The cervical canal freely admitted the finger. The funic souffle was heard, the pulse-rate being 150. Delivery occurred without accident on September 2. The cord passed once around the neck of the child. The total length of the cord was twenty-six inches. At distances of eight and twelve inches respectively from the placental end there were single knots without adhesions; so that they could be untied without difficulty. As the child was born in the same position that it occupied four days before labor, the knots must, in all probability, have antedated the examination. Neither the knots nor the loop of cord around the neck caused any demonstrable interference with the circulation.

Case 3. Mrs. D., thirty-seven years old, had had seven deliveries at term and a miscarriage at the fourth month previously. Menstruation had not occurred for ten calendar months. Examination, on September 10, showed that the child was in L. O. P. position, with a pulse of 140. Labor occurred on September 13, the occiput rotating anteriorly. The vernix caseosa was unusually abundant; the placenta was very friable; the cord had a greenish color and a shrivelled appearance. Exact measurements could not be made, but the cord was short and, being about the child's neck, it had to be cut before delivery could be effected. At two points in the cord, the vessels made loops about one-fourth inch in circumference, supported by a thin process of Wharton's jelly. Although at first sight these off-shoots did not appear to be knots, further examination made it probable that they were the remains of knots formed quite early in gestation, the jelly having accommodated its shape to the general direction of the cord. There is a suspicion of syphilis in this case.

Yours truly,

A. L. BENEDICT.

86 W. Huron St., Buffalo, N. Y.

NOTES AND COMMENTS.

Micro-organisms and Amœboid Cells.

In a paper in the *British Medical Journal*, August 30, 1890, Dr. M. Armand Ruffer says:

It is easy to show that the epithelioid cells of infectious granulomata have functions similar to those of the same cells in lymphoid organs. In tubercle, for instance, such cells not only take into their interior the specific bacilli and digest them, as Metschnikoff had noticed, but, according to my observations, such cells absorb and digest the smaller lymphocytes which enter into the formation of the tubercle nodule. In glands, also, I have seen the same process taking place in the epithelioid cells entering into the formation of the chancre in the Schneiderian membrane of the nose. But there is one disease in which the destructive action of these cells can best be studied, namely, in actino-mycosis. Professor Crookshank, in his researches of this disease in men and animals, described large mono-nucleated cells, which he rightly, in my opinion, compared and regarded as identical with the epithelioid cells of the tubercle. If, instead of examining the centre of each microscopic nodule, which consists of the central mass of hyphen-like bodies lying in a nest of epithelioid cells surrounded by inflammatory material, the periphery of the nodule be examined, a number of epithelioid cells are found, often containing in their interior one, two, three or more—sometimes as many as eight or ten—lymphocytes in various stages of degeneration. They, like the epithelioid cells of tubercle, of glands, lymphatic glands, spleen, etc., are easily recognized by their large, clear, vesicular, generally single nucleus, and the large amount of vacuolated protoplasm surrounding it.

The power which such cells possess of taking into their interior and destroying pathogenic micro-organisms has already been dwelt on by Metschnikoff. As a rule, however, epithelioid cells are concerned chiefly in the destruction of other cells which have been weakened, or have died, as the result of their struggle with pathogenic parasites. Notice also, that these cells do not pre-exist at the point where the struggle takes place, but that time must elapse—several days in most cases—before such cells are formed.

Of the larger multi-nucleated cells (so-called giant-cells) which are found in certain chronic forms of inflammation, namely, tubercle and actino-mycosis, I have little to say that is new. According to Metschnikoff, such a cell is formed either by karyokinesis (the protoplasm of the cell not dividing) or by the fusion of several epithelioid cells. In any case I agree with Metschnikoff in thinking that, far from a giant-cell being a structure in any way weakened or diseased, it is on the contrary a most active body—in other words, a *fighting* cell. Every one who has successfully isolated one, and has seen its long slender processes often prolonged in the interstices between many groups of cells, cannot doubt that it is an amœboid structure. Its contents, again, show it to be a combatant, for in it are found numbers of tubercle bacilli, in various stages of destruction—a fact already described in masterly fashion by Metschnikoff, whose observations on that point I can only confirm.

I have lately, though quite accidentally, observed one fact which illustrates this destructive function of giant-cells. In the spleen of many animals, more especially of guinea-pigs, the uninucleated epithelioid cells often contain a quantity of pigment, which is really the remainder of red corpuscles destroyed in the interior of these cells. I have lately shown that the number of these cells is greatly increased in certain infective diseases, that is, quarter-evil. In the spleen of tuberculous guinea-pigs, in which the tubercle has invaded that organ, the destruction of red blood corpuscles in the macrophages of the spleen is an extremely active one, but—and this is the most interesting point—the giant-cells of tubercle take an active share in this process, and I show you here two giant cells absolutely crammed with blood-pigment and debris of partially-digested leucocytes—a further proof that giant cells are amœboid, and, like other amœboid structures, have the power of taking into their interior, and digesting, red blood corpuscles, leucocytes and micro-organisms.

Considering, therefore, that the tubercle-nodule consists of a number of extremely active amœboid cells, which all have the power of seizing, destroying and digesting tubercle bacilli, I am of the opinion that the nodule is really a barrier raised up against the invasion of the whole organism by the specific bacilli, and that the processes taking place in the nodule, as long as the

anatomical elements composing it are alive, serve a useful purpose.

Lately I have published facts showing that processes going on at the point of inoculation of the virus of quarter-evil are really protective in their nature. I endeavored to show that in this disease, as soon as the virus was introduced subcutaneously, an emigration of leucocytes took place, which, surrounding the virus, prevented the specific bacilli from getting into the system. Moreover, the leucocytes, taking the bacilli into their interior, destroyed and digested them. The conclusions I drew from those experiments were that:

(1) The inflammatory process consecutive to the introduction of the bacilli of quarter-evil under the guinea-pig's skin is a protective process, and serves a useful purpose; and (2) the destruction of micro-organisms at the point of inoculation is carried out entirely by the amœboid cells present in the inflammatory exudation.

More lately still I have brought forward similar facts relating to diphtheria, but, as they have only just been published, I must restrict myself to repeating the conclusions at which I have arrived.

1. The bacilli of diphtheria are present in the most superficial part of the membrane only, that is, in a place where they are well within reach of medicinal agents, an observation not without interest from the point of view of treatment.

2. In the diphtheritic membranes there is an active struggle taking place between the amœboid cells in the membrane and the micro-organisms. In other words, the diphtheritic membrane is a battlefield for amœboid cells and the pathogenic microbes of diphtheria.

3. The reason why the bacilli do not actually penetrate into the tissues is probably that, as soon as they try to do so, they are arrested by the amœboid cells present in the diphtheritic membrane.

Salol for Tonsillitis.

Few diseases are more prevalent in our climate than acute angina. And while attacks of tonsillitis and pharyngitis are not to be classed with the graver affections, the amount of suffering and discomfort they entail often make them objects of serious concern to the practitioner. These inflammations are strictly self-limited, and gene-

rally subside without treatment in from three to seven days. Nevertheless, the means at our command to lessen the annoying dysphagia and other distressing symptoms are not as satisfactory as they might be, especially from the patient's point of view.

Salol has lately received some warm praises as a drug that can be relied upon to favorably influence the course of these affections. Gouguenheim and Capart have pointed out its utility, and in our country Dr. Jonathan Wright, of Brooklyn (*The American Journal of the Medical Sciences*, August, 1890), speaks highly of the remedy. As salol is one of our newer compounds, Dr. Wright's brief synopsis of its properties and action may serve as a reminder here.

It was discovered by Nencki, a Swiss chemist, in 1883, and first used by Sahli in 1886. It is a colorless substance, sold in the shops as a coarse, white crystalline powder. It has a marked aromatic odor, and a faint taste, which is rather agreeable than otherwise. Chemically it consists of salicylic acid in which one atom of hydrogen has been replaced by the phenol group, and contains synthetically forty per cent. of the latter and sixty per cent. of the former. It is a proprietary article, made abroad, and usually sells at four dollars a pound.

It is insoluble in water, but, like the fats, is soluble in alcohol and ether, and is decomposed by sodium bicarbonate. Hence it should not be given in combination with the latter. It forms emulsions easily. Though crystalline in structure, it cannot be reduced to a fine powder, on account of the tendency of its particles to cohere. It has a low melting-point (43° C.).

It is insoluble in the gastric juice, but is readily dissolved in the pancreatic and intestinal secretions, where it is separated into its primary constituents, both of which are readily absorbed and appear in the urine, giving it the olive-green color caused by carbolic acid. In thirty-grain doses it is a powerful antipyretic, but in smaller and frequently repeated doses (five grains every hour) it is not so efficient in this regard. Its odor is very distinctly appreciated in the secretions and in the expired air.

The unique characteristic of salol in being able to pass the gastric juice unchanged, while in the intestines it is decomposed into phenol and salicylic acid, both being antiseptics, has been taken advantage of in treating the summer diarrheas of children.

The rapidity with which these drugs are absorbed, and the promptness with which they appear in the urine, have made it valuable in treating cystitis, pyelitis and gonorrhoea.

It has been used as an antipyretic successfully. But its principal use has been as a substitute for the compounds of salicylic acid in the treatment of rheumatism.

It has proved of service in sciatica and lumbago. The observations on its effects in allaying the pain in rheumatism are interesting in a consideration of its action on the dysphagia of acute throat affections, the time in which it is said to relieve the pain—twenty-four to forty-eight hours—corresponding very closely to the author's experience. Its occasional entire failure is also noted in both cases. The carboluria, which is always present, is the only sign of any phenol poisoning that is noticed, and need consequently give rise to no apprehensions.

In its administration he has never given less than sixty grains daily, nor more than one hundred and twenty, the most frequent dose having been ninety grains for adults. It may be given in powder form or as an emulsion. The most efficient method is to give it in ten-grain doses every two hours during the day.

He has noticed the most marked effect in lacunar tonsillitis, less in catarrhal pharyngitis and least in a well-developed quinsy. For the latter, hot fomentations and free incision are the best remedies, though salol may be given as an adjuvant. This, of course, only applies to cases after the fourth day, before that time the greatest relief being often obtainable by the use of the drug.

Dr. Wright concludes by transcribing Gouguenheim's summary, which he endorses in every particular:

1. Salol acts beneficially in acute anginas of whatever cause.
2. It quiets the pain and dysphagia with the greatest rapidity.
3. In quieting the pain it may shorten the duration of quinsy.
4. It lowers the temperature.
5. In nearly all cases it diminishes the duration of angina.
6. In order to attain these results, the dose should not be less than sixty grains daily.—*Medical Record*, Sept. 6, 1890.

Nature and Treatment of Impetigo.

Dr. Brocq writes from Paris to the *Journal of Cutaneous and Genito-Urinary Dis-*

case, September, 1890, that Dr. W. Dubreuilh has just published in the *Annales de Dermatologie* an article on impetigo. He has already made known to your readers the views of the French school upon these points. We no longer adopt in Paris the opinion of Professor Hardy that impetigo should enter into the category of eczema. For us impetigo is an affection *sui generis*, definitely characterized by its vesico-pustular aspect, by its evolution, by its auto-inoculability and its non-inoculability to a healthy individual. It sometimes complicates eczema, but it may exist alone and follow its complete evolution as an impetigo without being complicated by an eczematous eruption.

These ideas, long held in honor at the Hôpital St. Louis, have been newly sustained by Dr. Dubreuilh. He believes that the intra-epidermic inoculations of any kind of pus may give rise to impetigo. Still one cannot find in the suppurative focus the origin of this dermatosis; but then its genesis is explained by the fact that we frequently find the *staphylococci pyogenes* upon the surface of the healthy skin, and in the dust which surrounds us. The question of the terrain still remains the most important, since the same causes may act upon many individuals without determining in all eruptions of impetigo. In fine, impetigo appears to the author to be an entity, perfectly determinate from a clinical point of view by its superficial pustule containing a quantity of viscous pus, which dries in thick and honey-like crusts, as well as by its contagiousness, while there is no etiological specificity, it being due simply to an inoculation under certain conditions of pyogenic microbes of whatever origin. He says that we cannot distinguish a contagious impetigo as a special form; there is but one impetigo—the impetigo vulgaris—which is contagious.

In Dr. Dubreuilh's opinion, ecthyma is only an irritated impetigo, inflamed by the sanguineous stasis, by the friction of the clothing, by traumatisms of every sort, and favored by dirt and often by a cachectic state.

The following is the method which he recommends for the treatment of this affection. The capital point is to detach the crusts and prevent their reformation. The first indication may be filled by poultices or by ointments; the second, by applying them frequently and in great abundance, so that

the surface of the skin may not be allowed to become dry. Thus he advises that the diseased surface should be smeared twice daily with a layer of the topic sufficiently thick and covered with linen smeared with the same ointment, and retained in position by a suitable bandage. As an ointment he recommends vaseline and lard, each 50 parts; oxide of zinc, 20 parts; salicylic acid, 2 parts; acetate of lead, crystallized, 1 part. Each time the application is renewed it is well to cleanse the diseased surface by gently wiping it rather than by washing, and to lift up the crusts which may have accumulated.

A Medico-Legal View of Painless Labor.

Dr. Brunon recently reported to the *Société de Médecine* of Rouen the case of a primipara whose labor was so nearly painless that she herself mistook it for difficult defecation and would have been delivered in the water-closet if she had not been removed from it. According to the abstract published in *La Normandie médicale*, she felt only lumbar pains and a sense of weight in the rectum, and was not aware of the flow of liquor amnii. The author infers from this case that the discovery of a new-born infant in a water-closet pan does not necessarily raise the presumption of premeditated infanticide.—*New York Medical Journal*, Sept. 6, 1890.

Leprosy in Spain.

Some interesting particulars are given by the British Consul at Cadiz, in his last report, as to the San Lazaro leper hospital, which has been in existence at Seville for over 600 years. The first leper house in Spain was founded at Valencia, in 1067. The San Lazaro Hospital was founded by Ferdinand the Third, when he took Seville from the Moors in 1248. It is situated about a mile to the north of the city. A decree was issued in 1478, confirming previous enactments to the same effect: "That all persons without distinction residing within the Archbishopric of Seville and the Bishopric of Cadiz, denounced and declared lepers, must go to the Hospital de San Lazaro, Seville." This decree was carried out with great rigor. From the reign of Alfonso X, down to the last century, it was the custom for four patients to visit Seville daily on horseback begging,

and as they were not allowed to speak to ordinary persons, they attracted attention by means of boards. In 1854 the hospital was put under the charge of the Diputacion Provincial; the edifice was then little better than a ruin, and contained only 29 patients. In 1864 the building was repaired. The patients, who number on the average from 30 to 36, are looked after by Sisters of Charity. From the official reports it appears that the patients are not all lepers, cases of cancer, "inveterate" syphilis and other diseases being admitted.—*British Medical Journal*, August 30, 1890.

Boroglycerin Cream.

The following preparation is said to be excellent for chapped hands, lips, etc.:

Dissolve one part of boric acid in twenty-four parts of glycerin; add to this solution five parts of lanolin free from water, and seventy parts of vaseline. The preparation may be colored and perfumed.

A Third Ureter Emptying into the Urethra.

The *Atlanta Medical and Surgical Journal*, September, 1890, quotes from the *Monatshfte für Praktische Dermatologie*, that on the 29th of March, 1890, Dr. Desiderius Velits presented to the Medical Society of Budapest, from the gynecological clinic of Prof. Tauffer, a fourteen-year-old girl who had suffered since birth with dribbling of urine. There was present, on the upper third left side of the large urethra a small opening. A hollow urethral sound directed into this opening upwards and backwards, somewhat to the left, emptied, after a moment, drops of urine. The cystoscopic examination revealed that both ureter openings were normally present in the bladder, and this third canal did not open in the bladder but—as shown by moving the catheter—passed over the posterior wall of the bladder, somewhat on the left side—above and to the left. The bladder was opened through epicystomy, and the opening of this third ureter fastened in the bladder, above the sphincter vesicæ, as follows: By means of the inserted hollow sound, the anterior wall of the abnormal ureter was carried behind and above the left vesical ureter opening, and the canal opened with a slit upon the sound, so that the button of the sound was now visible in

the bladder; and at the same time urine dropped in the bladder through the freshly made opening. Then a portion of the ureter, anterior to the opening, was cut out, and cut end was cauterized with the Paquelin cautery. The bladder and abdominal wounds were sutured. Healing occurred without reaction, and about a month after the operation there had been no dripping of urine.

NEWS.

—Dr. David D. Stewart has removed to 1310 Walnut street, Philadelphia.

—Dr. William Y. Howard has removed to 1103 West Broadway, Louisville, Ky.

—The medical schools in Philadelphia began their regular Winter Sessions on October 1, to large classes.

—On September 26, Governor Beaver, of Pennsylvania, appointed Dr. Ellwood N. Corson, of Norristown, a Trustee of the State Lunatic Hospital at that place.

—The incorporators of the Rush Hospital for Consumption, in Philadelphia, met on September 30 and adopted by-laws, and gave the enterprise into the hands of the Board of Trustees appointed by the charter. It is expected that active operations will soon be begun.

—The University of Michigan, in Ann Arbor, has opened its current Winter Session with the largest class in its history. This is to the surprise of the officials, as the required course in the medical department is four years instead of three. Everything points to over a hundred gain for this year.

—In New York, in the case of Dr. McGonegal, charged with causing the death of Annie Goodwin by a criminal operation, the jury, on October 3, returned a verdict of manslaughter in the first degree. Sentence was deferred for a week in order to give opportunity to prove character. The maximum penalty is twenty years in State prison.

—The *Philadelphia Ledger*, October 4, 1890, says Mrs. James Caley, probably the oldest woman in Connecticut; if not in New England, died at Easton, in that State, on Thursday, at the age of 110 years. Her age is said to be verified by the town records of Fairfield, where she was born. Although she had been in feeble health for several years she retained her faculties until death. She distinctly remembered events that occurred 105 years ago.